Heritage documentation for conservation: partnership in learning

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Abstract: this paper presents the objectives, activities, and achievements of an on going international initiative in the field of heritage documentation for conservation. This partnership was established by the Raymond Lemaire International Centre for Conservation (Belgium) and English Heritage (United Kingdom). It has developed to include the work of The Getty Conservation Institute (USA), University of Pennsylvania (USA), and Public Works (Canada). It provides unique hands-on heritage recording training by practitioners to student conservators, and professionals.

Introduction

During the first phase of the CIPA[1] RecorDIM initiative that concluded in 2007, important gaps where identified between the users and providers of heritage information for conservation, training was identified as an important issue in the heritage documentation process. Heritage documentation is defined by RecorDiM round table 3 :

"Heritage Documentation is a continuous process enabling the monitoring, maintenance and understanding needed for conservation by the supply of appropriate and timely information. Documentation is both the product and action of meeting the information needs of heritage management. It makes available a range of tangible and intangible resources, such as metric, narrative, thematic and societal records of cultural heritage."

To address the skill gap, often apparent in the poor quality of documentation procurement in conservation projects a partnership between the Raymond Lemaire International Centre for Conservation (Belgium), and English Heritage (United Kingdom) based on a 3 day short introductory course. The Getty Conservation Institute (USA), and Public Works (Canada) have participated in the publication of a variety of training

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[1] ICOMOS Committee for Heritage Documentation (CIPA)

material including the dissemination of model briefs and specifications for metric survey .

Figure 1: student measuring an historic building during a course, author.

A common failure in heritage documentation is to attempt information capture with an inappropriate technique because of a lack of knowledge of the techniques available or a desire to deploy only those techniques which can be resourced by the conservator alone. Understanding the limits of 'DIY' documentation and the benefits of metric techniques is at the core of the initative. By sharing the experience of documentation practitioners across a variety of techniques students can learn to balance the information needs of projects with appropriate methods of capture.

The training material is addressed to different levels of management in a conservation organization, providing both decision makers and field personnel the opportunity to learn how heritage information can be collected effectively, timely, and precise for the tasks in heritage conservation.

Background

The institutions offered their skills in this partnership, providing a theoretical and practical approach to form integral training activities in learning heritage-recording skills for conservation.

Conservation studies

The Raymond Lemaire International Centre for Conservation organizes a two-year advanced master in conservation of monuments and sites. Also, the University of Pennsylvania organizes a two year graduate program on Historic Preservation.

These two programs have provided the partnership with the ideal platform for testing the training material and strategy designed.

Heritage recording

English Heritage has been organizing a heritage recording school every summer in the United Kingdom, providing scholars and professionals the opportunity to learn skills and issues in the practice of heritage recording in the UK.

The Getty Conservation Institute and the World Monuments Fund have been collaborating in the organization of training courses for Iraq's State Board of Antiquities and the Jordanian Department of Antiquities, where heritage-recording skills have been taught in collaboration with English Heritage and the R. Lemaire International Centre for Conservation, this training initiatives have provided additional grounds for testing material developed by the institutions with organizations in the field.

Practice

Besides the training experience of these institutions, and in particular English Heritage, the Getty Conservation Institute, and Public Works Canada have a recognize experience in recording heritage places. This experience provided the needed reality check of the skills been taught during training activities.

Designing courses

The training concept deals with explaining fundamentals and techniques in two levels of comprehension:

- Understanding: the participant has demonstrated understanding of the procedure and objectives in the use of specific recording technique(s) in documentation of built heritage.
- Demonstrate competence: the participant has demonstrated knowledge and competence in the objective and procedure in operating a specific recording technique(s) in documentation of built heritage.

The contents of each of the training courses are decided upon careful assessment of the institutional impact to the specific organization for which the course is being organized; as well as, the heritage information needs and requirements for conservation. This assessment allows a cost-effective approach to heritage recording.

Additionally, an assessment about the participant profile to be achieved after the training is reviewed. It is very important to assess and identify the skills already present in organizations, this allows to evaluate the extend of the course and focus.

The conceptualization of a course is illustrated in the case study presented in this paper.

Reference material

The product of the RecorDIM initiative permitted to developed adequate and precise reference material, this package includes:

- Heritage information guidelines;
- Illustrated examples of heritage information projects;
- Hands-on manuals;
- Teaching guidelines in different metric survey techniques.

The material provides a concise reference about fundamentals, techniques, and examples of heritage recording for conservation.

Case study: Heritage Places 3D Documentation for Conservation Workshop (3D HERITAGEDOCCON)

Every year, for the master students of the Raymond Lemaire International Centre for Conservation (Belgium), English Heritage (United Kingdom), The Getty Conservation Institute (USA), and Public Works (Canada) joint efforts in organizing a three-days heritage-documentation workshop.

Course concept

3D HERITAGEDOCCON is a training course designed for graduate students of conservation to understand the benefits, constraints and opportunities that recording tools for architectural conservation provide.

The course is structured in 1/2-day session of lectures, 1 _ days of field work sessions and a final presentation prepared by students on the activities prepared. A heritage place is selected as venue and the participants are split in groups covering different areas of the building.

The course is focused on the production of documentation deliverables in response to a specific conservation aspect (for example, recording condition) of the heritage place, a set of clearly identified tools and fixed time constraint.

The idea of including a time constraint and task based exercise is to compel the students and instructors to address the concepts of scale and level of detail required. Rapid skill uptake and maximizing the training opportunity are important. By presenting a documentation set that fulfills heritage information needs for a particular case the success or failure of technique selection is plain for all to see.
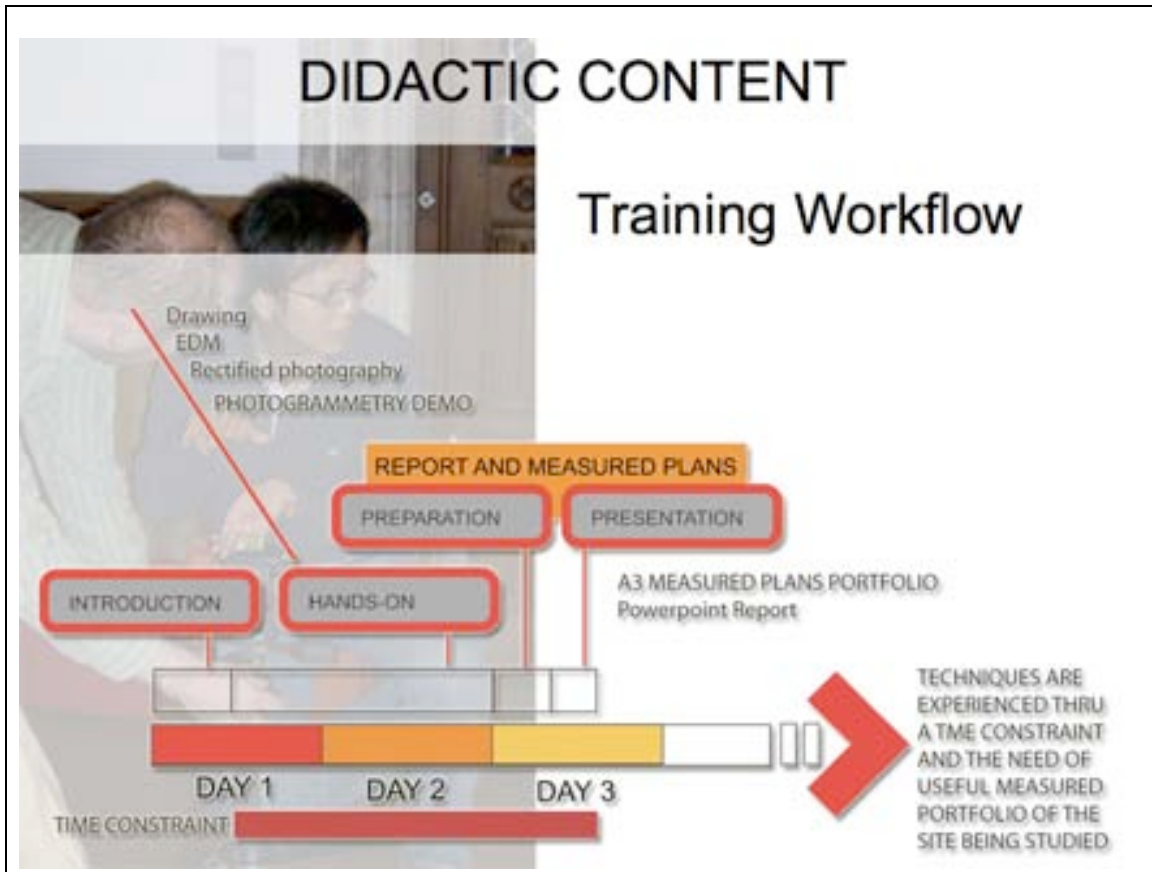

Figure 2: training concept, author.

Range of techniques and applications

As developed since 2001, the course includes the following techniques:

-       REDM Measurements (Using a Total Station, TheoLt and AutoCAD)
-       Scaled-rectified Photography
-       Panoramic Photography
-       Measured drawing by hand, sketching critical details
-       Digital Photography
-       Distance measuring (DISTO)

Additionally, the course covers an introductory close range photogrammetry session, guided by a senior photogrammetric practitioner, taking students

through live examples of stereo capture, digital processing and orthophoto production.

Activities

Lectures

The introductory lectures are designed to present an overview of the tools available for and their application. The basis is the RecorDIM material developed by both English Heritage and the Getty Conservation Institute in collaboration with the R. Lemaire International Centre for Conservation. The material describes the variety of information needs and how they can be met using a range of techniques. The concept of the heritage cycle and its information needs is key to this introductory phase.

Fieldwork sessions

Divided into teams, the students are instructed in the tools they will have available for the session and the conservation constraints on the information capture out comes. Metric photography and scale drawings are emphasized as the required deliverables to be prepared with the assistance of the instructors.

Figure 3: students measuring with different techniques, author.

The course deliverable is designed to meet modern conservation practice and as such is a CAD product, often incorporating scaled imagery. The step up from basic 2D CAD to a skill-set needed to prepare traditional plotted plans and sections from 3D wire-frame data is a key component in the fieldwork session as decisions need to be made on viewpoint and data

interpretation. Skills transfer is achieved by using simple, transparent, tools like real-time REDM to CAD (TheoLt) and CAD based image rectification (PhotoPlan), the balance of time needed to achieve reliable CAD products is examined and selection of details for measured drawing is re-enforced by practice. The value of supplementary information from panoramic imagery is emphasized.

Final presentations

The students, with the help of the instructors, are expected to prepare a 10 minute (maximum 7 slides) presentation describing the techniques used, methodology and results of the 1 _ days work. The measured plans resulting from the work are plotted as both PDF and A3 hard copy proof during the final day to present as proof of work and as a basis for discussion on the performance of the selected techniques to selected members of the University conservation school staff.

Expected results and deliverables

This learning experience permits the participants to practice first hand with the array of techniques shown, identifying their constraints and benefits in heritage documentation. At the end of the course they learn how to procure and produce a set of maps to scale and with an adequate level of detail. The maps they have been preparing in the course are:

- 3D Wire-frames of the selected area of the building;
- Panoramic photography illustrating the area being studied;
- Elevation maps using rectified photographs to understand condition and significance of the area studied;
- Plans and sections of the selected buildings to understand condition and significance of the area studied;
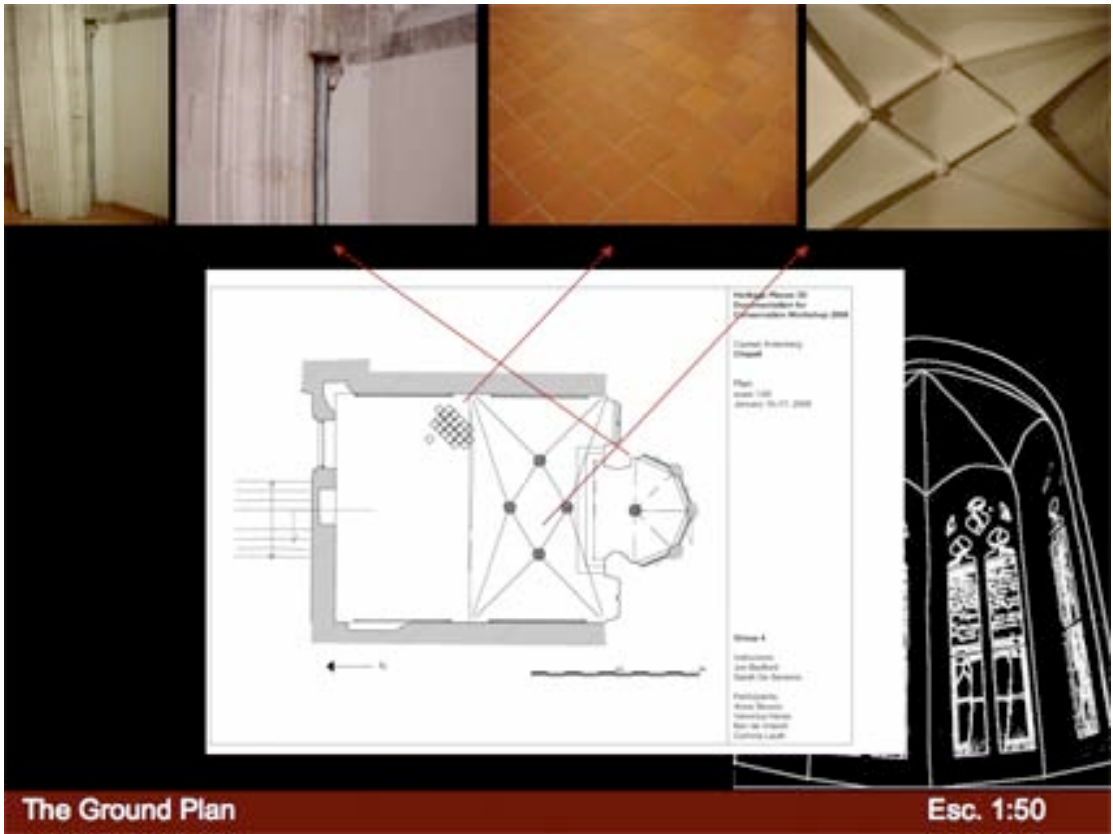
Figure 4: a screenshot of the final presentation compiled by the participants, group at the Chapel 2008.

Figure 5: section prepared by participants during the course, group at the Tower 2008.

Relation to the Master in Conservation

This tailor made heritage documentation course is an essential part of the learning process for documenting heritage places. After the completion of the course, the students used the skills learn to document a historic building as part of the course's Integrated Project Work.

Conclusions

The learning experience in heritage documentation presented here, is an innovative, cost effective and simple approach permitting conservation students and practitioners to experience the constraints and benefits of these techniques.

This course can be replicated easily in different contexts and, as it is reliant on technique specific expertise delivered by expert specialists, it is easy to organize, the participating organizations benefit from transmitting their knowledge and also from getting feedback about their use from the students. The master course benefits from a first hand workshop with experienced heritage recorders.

Future work

The publication of the teaching material and the dissemination of examples prepared for the RecorDIM initiative will improve the access to the knowledge accumulated in its preparation. It is hoped the GCI will sponsor this: limited print runs have proved invaluable to students and the refinement achieved over 3 years of use has made the teaching guide very comprehensive.

The development of standards and research into 3D data performance are needed. The need for research into the performance of digital data in heritage documentation is pressing, particularly with respect to 3D data: the standards we have to ensure effective transmission and interpretation of data are largely tied to drawing board practice and must adapt to ensure conservation gets appropriate information sets from emerging new metric survey technologies and their data sets.

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He completed studies of architecture in 1994 at the Universidad Central de Venezuela. In 2003 he obtained a PhD with a dissertation entitled 'The use of three-dimensional documentation and dissemination techniques in studying built heritage' at the R. Lemaire International Centre for Conservation (University of Leuven). Besides his research experience, he assistant professor at the R. Lemaire Centre for Conservation, University of Leuven, Professor at the University of Applied Sciences St Lieven and associate faculty at the University of Pennsylvania. He is currently the Vice

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Furthermore, he has been working since 1997 as Cultural Heritage documentation consultant for the UNESCO's World Heritage Centre, World Monuments Fund, Getty Conservation Institute, UNDP, ICCROM, Abu Dhabi Authority for Culture and Heritage, Petra National Trust, and the University of Aachen RWTH.

Bill Blake

Manager: Measured Survey, Imaging Graphics and Survey Team at English Heritage.

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Executive Board Member of the joint ICOMOS/ISPRS International Committee for Documentation of Cultural Heritage (CIPA) since 2005
Developer of real-time Computer-aided Design (CAD) Survey = and integrated CAD methods for drawing production.Developer of Specifications for Metric Survey in a Heritage context Active in the ongoing development of standards for 3D heritage documentation through the application of experience in survey, commissioning survey and the teaching of skills in digital documentation
Contributor to the published body of knowledge on applied survey in heritage, including the direct technique aspects of *Metric Survey Specification for English Heritage* - the current model of survey technology application in heritage. This defines the balance between the three elements of the documentation process: *data capture*, *information selection* and *communication.*

Introduced CAD practice at Ancient Monuments Drawing Office (AMDO) under Terry Ball *RA*